GEOGRAPHIC NEWS BULLETIN

Published Weekly by

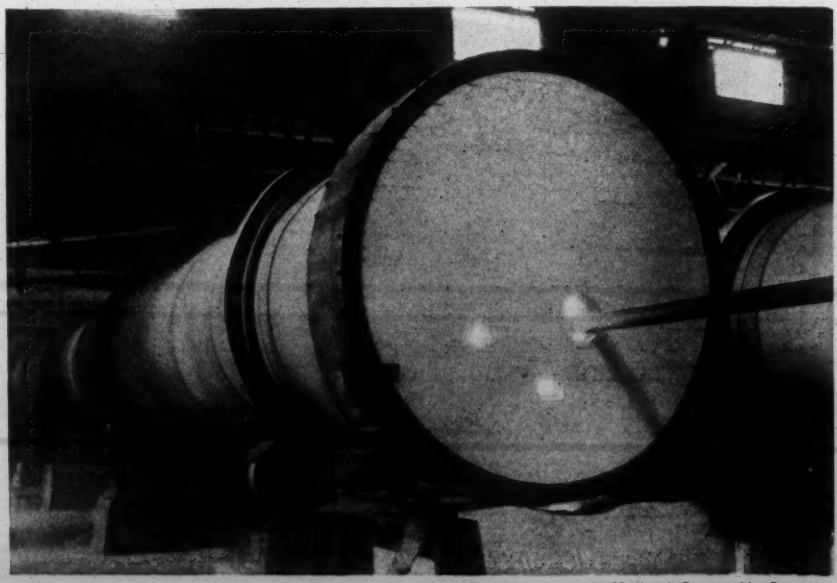
THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

CONTENTS FOR WEEK OF JANUARY 12, 1925. Vol. III. No. 23.

1. "Finger Printing" an Errant Border.
2. Tunis: France's Egypt.
3. Cape Sabine: Where Far Northern Monument Marks Arctic Tragedy.
4. The Anniversary of Cement.
5. Archangel: Port of Russia's Frozen North.



© *National Geographic Society.*

A ROTARY CEMENT KILN

The powdered coal for fuel is blown into the kiln through the pipe in the end. The glowing spot below is the opening through which, after having donned green goggles, one looks at the inferno within.

HOW TO OBTAIN THE BULLETIN

The Geographic News Bulletin is published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

"Finger Printing" an Errant Border

IF AIRPLANES and efficient cameras had been in use for map-making three-quarters of a century ago when American boundary treaties with neighboring countries were adopted and certain state lines were agreed upon, Uncle Sam could rest easier about the title to his old homestead. A suit of many years' standing is before the United States Supreme Court to determine the correct river boundary between New Mexico and Texas near El Paso, and a similar problem concerning the international boundary between Texas and Mexico along the Rio Grande River is to be attacked by United States Army photographers who will snap aerial views of the disputed territory.

Some Rivers Poor Boundaries

Rivers are popularly believed to constitute ideal boundaries since they make bold lines with one jurisdiction on one bank and another on the other. Rivers that "stay put" do make unsurpassed boundaries; but unfortunately there are streams or parts of them that wander, so to speak, all over the geographic lot; and more exasperating and unsatisfactory boundaries hardly could be devised. Such are streams flowing between low banks through broad, flat, alluvial valleys, especially in semi-arid regions where there is little vegetation to assist in holding unruly waters to their channels.

Much controversy has arisen since the creation of the United States over the water boundaries separating our territory from that of Canada, from the St. Croix River at the northeastern corner of Maine to the Rainy River of northern Minnesota, the westernmost stream boundary along the northern line. But the disagreements have been over the selections of these streams: once agreed upon they have remained fixed lines, running in their accustomed wooded and rock-bound courses.

Rio Grande Plays Tricks With Border

Not so with the Rio Grande, which forms the most extensive river boundary of the United States, and, save for some 20 miles along the lower Colorado, constitutes the only international river boundary in the South. This river, crossing numerous patches of alluvial valley lands, keeps Uncle Sam on pins and needles. He can never be entirely sure during certain seasons whether he will wake any day to find his supposed boundary marker where it was the night before. Especially is this true where the river approaches the Gulf of Mexico and where the accumulation of waters from its long drainage basin makes spring floods cut irresistibly across bends. Farms and ranches have thus been shifted over night from American to Mexican jurisdiction and vice versa.

In the rich alluvial valleys extending for miles above and below El Paso the river has had equally marked vagaries in the past, but changes are few now because of the control of flood waters only a short distance above the city by the huge Elephant Butte Dam of the United States Reclamation Service. From the city of El Paso northward for approximately twenty miles the Rio Grande forms the boundary, theoretically, between Texas and New Mexico. This boundary is not the Rio Grande of today, however, but that of 1850 when the

© National Geographic Society.

THE HABITAT OF WANDERING STREAMS

In such alluvial valleys as that shown above, especially in arid regions, every rise may create a new channel for the winding stream. The usual procedure is for the rapidly flowing waters to cut their way across bends. Compensating loops are created, however, and these in turn are abandoned later.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Tunis: France's Egypt

A "YOUNG TUNIS" movement in France's North African province of Tunisia is causing some statesmen at Paris to fear troubles like those Great Britain has experienced with the restlessness of the "Young Egyptians" and the "Young Indians."

Tunis, the capital of Tunisia, situated on the coast of northern Africa, in about the latitude of Norfolk, Va., is considered one of the most beautiful cities of the Orient.

It has a mixed population of more than 275,000: Arabs, Jews, French, Italians, Sicilians, Greeks and Maltese.

French Protectorate Since 1881

Tunisia was an absolute monarchy until 1881, then the "Treaty of Bardo" made it a French protectorate. It is governed by an Arab bey, who is advised by a resident general from France. The latter is in reality chief executive.

Tunis is called by the Arabs "The White Burnous (mantle) of the Prophet." Its houses are all flat-roofed and creamy white in color. Minarets point heavenward from every square, and from their tops may be heard the "call to prayer of the faithful" five times a day: "Allah is Allah. There is no God but Allah; Mohammed is his prophet."

Tunis has changed greatly since 1881. A large and attractive French town has sprung up outside the walls of the native city. Broad boulevards, with rows of palms and various shade trees; large shops, with tempting displays; modern hotels with every comfort and luxury; restaurants, cafes, and garages for the motors that come in greater numbers every season. Trolleys run in all directions, and Carthage can be reached in 25 minutes.

Women See Only Few Steps in Front

Friday is the Arab Sunday, when all the women go in the morning to the cemeteries to pray. One passes hundreds of them chatting together, dressed in their silvery white "Haiks" and black face-veils. Many of the women of the wealthy families, instead of a face-veil, wear a broad scarf of heavy dark silk, which covers their face and is held out in front by the arms of the wearer. All she can see is a few steps in front of her feet. These wealthy women are usually followed by several female attendants.

A tiny donkey with paniers filled with oranges shoves you up against the wall of the narrow street as he passes, and you wonder what the vender is crying. It sounds weird, but translated means only, "Oranges—sweeter than honey."

When you enter the souks, or bazaars, steaming Turkish coffee is brought in tiny cups, while oriental rugs, silks, jewels and antique weapons are shown.

Animals Must Die Facing Mecca

At the slaughter-house there are three separate divisions—one for the Europeans, one for the Jews, and a third for the Mohammedans, where the animal to be killed has to face toward Mecca.

In the days of Rome northern Africa (Tunisia) was called the "granary of the world," for the Roman system of irrigation was marvelous and the soil

UMI

dividing line was supposedly settled for all time. It is the disagreement over the location of this "Rio Grande of 1850" that has brought about the pending suit between the two states in the United States Supreme Court. Texas contends that the old river bed lay near the western side of the five-mile-wide valley, while New Mexico asserts that it lay near the eastern margin.

When a Farmer Becomes a Smuggler

The vagaries of rivers when international lines are affected sometimes lead to queer results. South of El Paso the Rio Grande some years ago branched in the alluvial valley and enclosed a large island. Across this island a surveyed line has since been recognized as the international boundary between the United States and Mexico. Cultivated fields reach this line at many points. Recently United States customs officials brought charges against a cotton farmer on the island for importing cotton without a license. The charges raised in the minds of most readers a picture of a lawless farmer-smuggler bringing loads of "bootleg" cotton across the line under cover of darkness. As a matter of fact the farmer had inadvertently set his field fence some four feet south of the international line. When he harvested his crop he merely followed the entirely proper routine of all his farmer neighbors in picking ninety-nine one-hundredths of his cotton. But when he plucked the lint from the row or two nearest the fence he ran afoul of the Federal customs laws and technically became a smuggler.

It is in this valley from El Paso southward for some 60 miles that Uncle Sam, with Mexican cooperation, will try the experiment of photographing his border from airplanes. It is believed that a photographic record of the river and its near-by landmarks will be invaluable in the future. Any disagreements as to changes in the river can easily be checked up either by measuring from the locations shown in the picture-map or by snapping new pictures and comparing them with those of 1924.

Bulletin No. 1, January 12, 1925.

Form for Renewal of Bulletin Requests

Many requests for the GEOGRAPHIC NEWS BULLETIN were made for the year ending with this issue. If you desire the Bulletins continued kindly notify The Society promptly. The attached form may be used:

School Service Department,
National Geographic Society,
Washington, D. C.

Kindly send.....copies of the GEOGRAPHIC NEWS BULLETIN for the school year beginning with the issue of....., for classroom use, to

Name.....

Address for sending Bulletins.....

City.....State.....

I am a teacher in.....school.....grade.

Enclose 25 cents for each annual subscription.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Cape Sabine: Where Far Northern Monument Marks Arctic Tragedy

DONALD MACMILLAN who returned last fall from a year's stay in the Arctic has just officially reported to the National Geographic Society the setting up of the Society's bronze tablet at Cape Sabine, Ellesmere Land, at the scene of one of the most tragic disasters in the history of American Arctic exploration, the refuge camp of the Greely exposition. Bolted to a huge bowlder at latitude 78° 45′ north, more than 800 miles above the Arctic Circle, this is one of the most northerly monuments in the world.

Gave Lives to Aid Science

On the tablet is inscribed:

"To the memory of the dead, who, under Lieutenant A. W. Greely, here gave their lives to ensure the final and complete success of the first scientific cooperation of the United States with other nations 1881–1884."

A bulletin from the Washington, D. C., headquarters of the National Geographic Society describes the region of Cape Sabine and the hardships encountered there.

"Though Cape Sabine is itself very far within the permanently cold regions, and throughout most of the year is a bleak region of rock and ice, it was not the northernmost base of the Greely expedition," says the bulletin. "That was at Lady Franklin Bay near the northern tip of Ellesmere Land. Cape Sabine, some 300 miles to the south, was the closest point to civilization to which Greely was able to take his men when they retreated southward after two promised annual relief expeditions failed to reach them.

Worked on in Face of Death

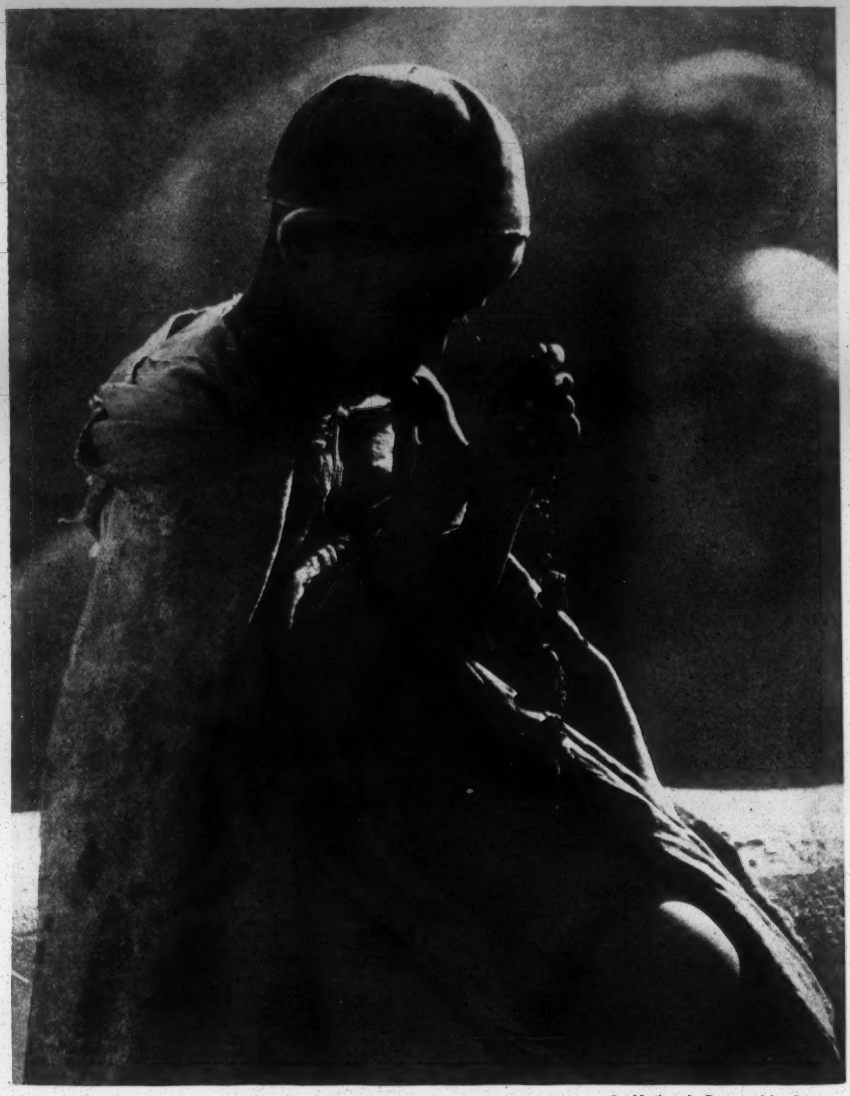
"There in a temperature far below zero with practically no fuel, and with provisions sufficient for only a few weeks, the party fought for life through the winter and spring of 1883–84. Their sufferings, both physical and mental, were acute. They grew too weak to hunt successfully and attempted to keep themselves alive on scraps of old seal skin, and rock lichens. One after another sickened and died, but still the survivors kept up faithfully the scientific observations for which they had been sent to the Arctic. The original party of 23 men was reduced to seven when on June 22, 1884, they were rescued. Of the seven only two or three were strong enough to move from their sleeping bags and even the strongest could hardly walk in stumbling fashion. But the scientific records, which added greatly to the world's geographic, meteorologic and magnetic knowledge, had been carefully kept until 40 hours before the rescue.

"The expedition, with another in Alaska, represented the United States in scientific work in which ten governments took part by making simultaneous observations at a series of stations around the North Pole."

fertile wherever water was to be had, and it was to be found in abundance in the mountains. The aqueduct, built under Hadrian, about 136 A.D., supplied Carthage with 32 million liters (over eight million gallons) of water a day.

Today Tunisia has over ten million olive trees under cultivation, and they cover an area of about 500,000 acres.

April 13 marks the commencement of the Jewish "Feast of Unleavened Bread," or Purim, when no business is done and unleavened bread must be eaten for seven days.



© *National Geographic Society.*

A BOY OF TUNIS EATING HIS DAILY "BREAD"

The Arabs of the extreme south of Tunisia are very poor and often the children wear only garments of old sacking. Dates from the fertile oases form the staff of life.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

The Anniversary of Cement

TO JOSEPH ASPDIN, an unsung stonemason of Leeds, the world pays honor this year for his discovery which literally cements the foundation stones of civilization.

The 100th anniversary of Joseph Aspdin's experiment producing artificial rock, yellow like the rock from the quarries of Portland, is marked by the erection in Leeds by the American cement manufacturers of a memorial tablet to one "who made the whole world his debtor."

Greater tribute to the vision of Joseph Aspdin are endless white ribbons of concrete highways, the annual increase of which in the United States alone would build three continuous Lincoln highways from New York to San Francisco.

Thirty Pyramids a Year

Cheops' great pyramid at Gizeh covering 13 acres and towering 481 feet, is still considered the world's most colossal man-made structure, yet the little lump of stone made by Joseph Aspdin in 1824 has grown so great that the United States is estimated to have poured in a recent year sufficient concrete to erect 30 pyramids like Cheops. The 90,000,000 cubic feet of the pyramid represent only three-fifths of the concrete in the Panama Canal.

Aspdin must share with imperial Rome part honor for giving the world liquid stone. Rome used hydraulic cement in her famous aqueducts and it was in search of Rome's secret, lost for ten centuries, that Aspdin and others worked their way toward modern concrete. Roman masons found that by mixing lime with volcanic ash from Pozzuoli near Naples a mortar impervious to water resulted. Unconsciously Aspdin imitated Nature. The stonemason, by baking his materials in a heat which approximated the volcano's heat, created the principle found in Pozzuoli ash.

Lehigh Is Cement Valley

Although Portland cement is produced in 27 states, the Lehigh Valley of Pennsylvania is the Pozzuoli of the United States. Silica, calcium and alumina are the necessary cement ingredients which are contained in rock formations "made to order" in this valley. The cement industry is the fourth largest user of coal and this fuel is also convenient. Often cement manufacturers use slag from blast furnaces also near-by, so the setting of the Lehigh valley is quite as ideal as the iron ore and coal seam union of Birmingham, Alabama. Freight rates on the heavy natural weight of cement tend to spread out the industry somewhat.

Crushers in the Lehigh valley take blasted rock as large as 5 feet wide, 3 feet high and 10 feet long, and munch them readily into bits. Other teeth grind the stone to powder which is mixed with water to form a sloppy "slurry." Under air pressure this is blown into the man-made volcano, a cement kiln, the largest of which is half as long as an average city block and has a diameter of 10 feet. This tube is lined with fire brick to withstand the terrific heat resulting from the burning of coal dust blown into the kiln from the other end. In the throat of this volcano a reaction occurs, transforming a third of the stone into the active principle of cement. An endless belt brings nodules out of the kiln to more

UMI

© *National Geographic Society.*

ON THE BLEAK TUNDRAS OF ARCTIC RUSSIA

The population in this region is very scarce. In summer there is grass for the few hardy cattle that have been acclimatized. In winter the land is a vast white desert of ice and snow.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Archangel: Port of Russia's Frozen North

SOLOVETSKY MONASTERY, situated on a bleak island in the White Sea, about a half day's boat journey from Archangel, Russia, is reported to have become one of the most dreaded prisons now used by the Soviet Government for the confinement of political offenders.

Archangel is the only community of any considerable importance in the Archangel province or government, a vast, barren and sparsely populated region, cut through by the Arctic Circle.

West and east, the distance across the Archangel district is about that from London to Rome, from New York to St. Louis, or from Boston to Charleston, S. C. Its area, exclusive of interior waters, is greater than that of France, Italy, Belgium and Holland combined. Yet there are not many more people in these great stretches than are to be found in Detroit, Michigan, or San Francisco, California, or Washington, D. C.

Port Ice-bound Six Months

The climate is extremely cold. In the northern parts the ground does not thaw the year round. The port of Archangel is ice-bound six months of the year, and entirely free from ice only three months.

Arable land in all this territory is less than 1,200 square miles, and three-fourths of that is given over to pasturage. The richer grazing land supports Holmagor cattle, a breed said to date back to the time of Peter the Great, who crossed native herds with cattle imported from Holland.

Rocky, barren plains stretch south of Archangel city and these, with the swamps and marshes to the east, and more plains and lakes to the southwest, form about half the province, while a third more is overgrown with forests. There also are tundras, covered with lichens, where reindeer find pasturage.

About fifty miles from the mouth of the Dvina river, which affords an outlet to the White Sea, lies the city of Archangel. Norsemen came to that port in the tenth century for trading. One expedition was described by Alfred the Great. But first contact with the outside world was established in the sixteenth century when Sir Richard Chancellor, an English sailor, stopped at the bleak haven while attempting a northeast passage to India. Ivan the Terrible summoned him to Moscow and made his visit the occasion for furthering commercial relations with England. Thirty years after the Englishman's visit a town was established and for the next hundred years it was the Muscovite kingdom's only seaport, chief doorway for trade with England and Holland.

Pilgrims Flocked to Island Monastery

When Peter the Great established St. Petersburg as his new capital much trade was diverted to the Baltic, but Archangel was compensated by designation as the capital of the Archangel government. Despite its isolation the city thus became a cosmopolitan center and up to the time of the World War Norwegian, German, British, Swedish and Danish cargo vessels came in large numbers.

Before the World War thousands of pilgrims would pass through Archangel every June on their way to the famous Solovetsky Monastery.

UMI

grinders which crush them to the fineness of flour. Six hundred pounds of raw materials and fuel are required for every 376 pound barrel of cement.

Cotton Bags for "Rock"

Cement has itself created a separate industry which has important bearing on the prosperity of the Southern States. Annually it requires 30 million new cement sacks of finely woven cotton. To make these, 60,000 acres of cotton must be grown and 1,600 looms operated every day of the year. Woven in one piece, 30 inches wide, the cloth that goes into these sacks would unroll for 17,000 miles.

The highest monument to concrete's value is a great chimney in Japan 15 feet higher than the Washington monument. It withstands frequent earthquakes. Lorado Taft's towering statue to "Black Hawk" above Oregon, Illinois, is a true monument to concrete. The material is used for levees on the Mississippi. It is shot from guns for broad surfaces. Ships and barges have been made with it. Skyscrapers find it a stout foundation. Farms alone use nearly one-fourth of the United States' cement for innumerable purposes. In 1914 it went into the front line trenches, and much of it is still in the front line trenches to the sorrow of French farmers. But the most romantic incident of all occurred when the old British ships with cargoes of dry concrete sailed into the harbors of Zeebrugge and Ostend and were sunk to make a concrete stopper to bottle up German submarines.

Bulletin No. 4, January 12, 1925.

Membership in The National Geographic Society

TEACHERS constantly inquire about membership in the National Geographic Society, and the procedure necessary to obtain the *National Geographic Magazine*, so highly valued in schools, and The Society's maps and panoramas which also go to members.

For your convenience a nomination blank, which members use in nominating their friends to the rich benefits of membership, is attached:

DUES

Annual membership in U. S., $3.00; annual membership abroad, $4.00; Canada, $3.50; life membership, $100. Please make remittances payable to the National Geographic Society, and if at a distance remit by New York draft, postal or express order.

RECOMMENDATION FOR MEMBERSHIP

IN THE

NATIONAL GEOGRAPHIC SOCIETY

The Membership Fee Includes Subscription to the National Geographic Magazine

PLEASE DETACH AND FILL IN BLANK BELOW AND SEND TO THE SECRETARY

.....192

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington, D. C.:

I nominate.....

Occupation.....
(This information is important for the records.)

Address.....

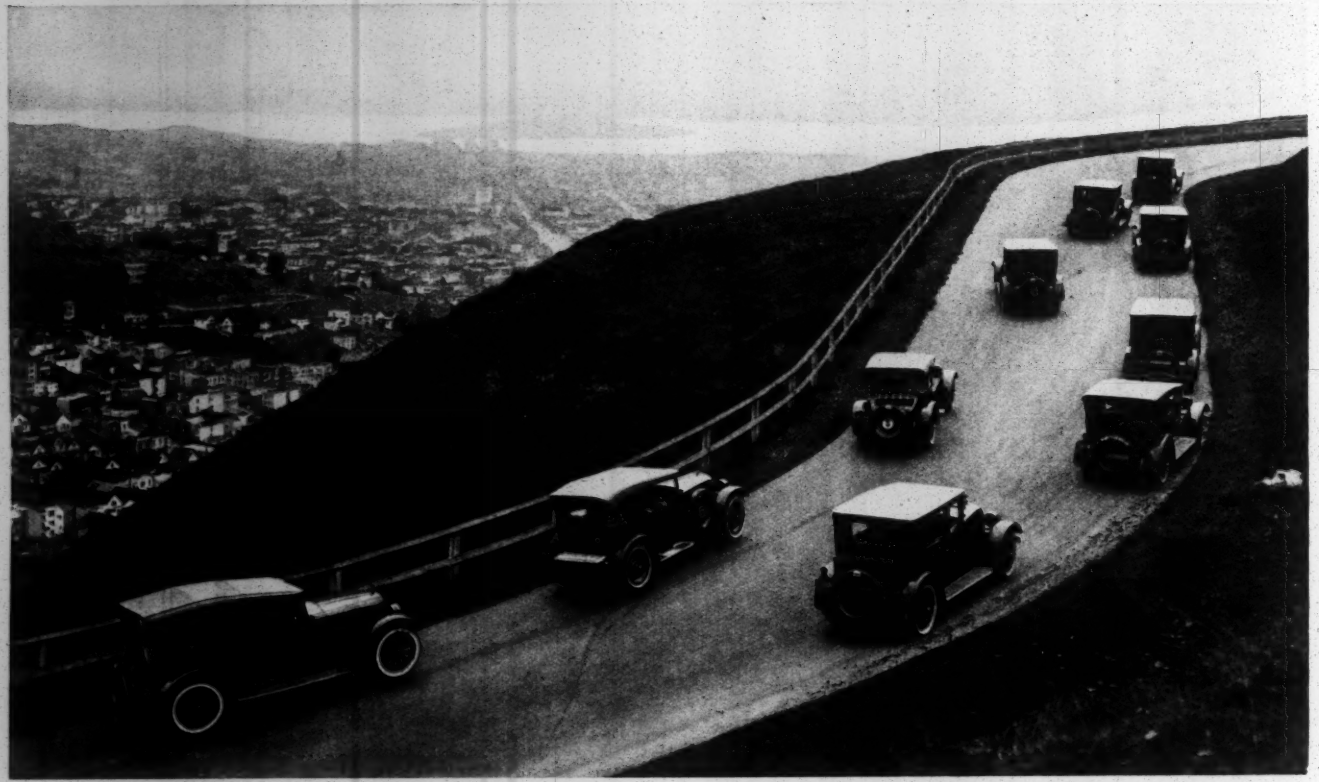
.....

for membership in the Society.

.....

.....
Name and Address of Nominating Member

b-ss



© National Geographic Society.

CEMENT'S CONTRIBUTION TO MOUNTAIN CLIMBING

Without cement the world could not have prepared nearly so well for the age of the motor car. Scientific tests show that it requires nearly three times more power to move a ton over a gravel road, and two times more power over a macadam road, compared with the 27.6 pounds necessary on a level stretch of concrete.